Applicant: Peter BOEHLAND Docket No. R.306284

Preliminary Amdt.

AMENDMENTS TO THE SPECIFICATION:

Page 1, please add the following <u>new paragraphs</u> before paragraph [0001]:

[0000.2] CROSS-REFERENCE TO RELATED APPLICATIONS

[0000.4] This application is a 35 USC 371 application of PCT/DE 2004/001978 filed on September 7, 2004.

[0000.6] BACKGROUND OF THE INVENTION

Please replace paragraph [0001] with the following amended paragraph:

[0001] Prior Art Field of the Invention

Please replace paragraph [0002] with the following amended paragraph:

[0002] The present invention relates to an <u>improved fuel</u> injection nozzle for an internal combustion engine, in particular in a motor vehicle[[,]] as generically defined by the preamble to claim 1.

Please add the following <u>new</u> paragraph after paragraph [0002]:

[0002.5] Description of the Prior Art

Please replace paragraph [0003] with the following amended paragraph:

[0003] An injection nozzle of this kind the type with which this invention is concerned is known, for example, from DE 100 58 153 A1 and has a first nozzle needle embodied in the form of a hollow needle and a second nozzle needle situated coaxial to the first nozzle needle. The first nozzle needle can control an injection of fuel through at least one first injection opening while the second nozzle needle can control the injection of fuel through at least one second injection opening. A control piston is provided for actuating the second nozzle needle and axially cooperates with the second nozzle needle or a second needle unit that includes the

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second nozzle needle. A control surface of this control piston oriented away from the

injection openings is situated in a control chamber and can be acted by the control pressure

prevailing therein. In a closed position of the second nozzle needle, the control piston rests

axially against the second nozzle needle or second needle unit.

Page 2, please replace paragraph [0005] with the following amended paragraph:

[0005] Advantages of the Invention

SUMMARY AND ADVANTAGES OF THE INVENTION

Please replace paragraph [0006] with the following amended paragraph:

[0006] The injection nozzle according to the present invention[[,]] with the characterizing

features of the independent claim, has the advantage over the prior art that both the first

nozzle needle and the second nozzle needle are controlled directly as a function of the

injection pressure. The injection nozzle according to the present invention thus eliminates the

costs of implementing a servo control. Moreover, the injection nozzle according to present

invention has comparatively high closing dynamics for both nozzle needles and also has high

opening dynamics for the second nozzle needle at comparatively high injection pressures. As

a result, the nozzle needles react very quickly to the closing so that extremely short closing

times can be achieved. The second nozzle needle then also reacts to the opening with a

corresponding rapidity so that relatively short opening times for the second nozzle needle can

also be achieved.

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Page 5, please replace paragraph [0011] with the following amended paragraph:

[0011] Other important characteristics and advantages of the injection nozzle according to

the present invention are disclosed ensue from the dependent claims, the drawings, and the

associated description of the drawings.

Please replace paragraph [0012] with the following amended paragraph:

BRIEF DESCRIPTION OF THE DRAWINGS [0012] Drawings

Please replace paragraph [0013] with the following amended paragraph:

[0013] Exemplary embodiments of the injection nozzle according to the present invention

are shown in the drawings and will be explained in detail hereinafter; components that are the

same, similar, or functionally equivalent have been provided with the same reference

numerals. herein below, with reference to the drawings, in which:

Please replace paragraph [0014] with the following amended paragraph:

[0014] Fig. 1 is a very simplified schematic depiction of a longitudinal section through an

injection nozzle according to the present invention, and

Please replace paragraph [0016] with the following amended paragraph:

[0016] Description of the Exemplary Embodiments

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Please replace paragraph [0017] with the following amended paragraph:

[0017] According to Fig. 1, an injection nozzle 1 according to the present invention has a

nozzle body 2 in which a first nozzle needle 3 and a second nozzle needle 4 are contained so

that they can execute a stroke motion. The nozzle needle body 2 contains at least one first

injection opening 5 and at least one second injection opening 6. Usually, several first

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injection openings 5 and/or several second injection openings 6 are provided, which are distributed symmetrically, in particular with reference to a longitudinal axis 7 of the nozzle

body 2 or nozzle needles 3, 4, for example in a star pattern. Via the injection openings 5, 6,

fuel can be injected or dispensed into an injection chamber 8, which can be constituted, for

example, by a combustion chamber of a cylinder associated with the injection nozzle 1 or by

a mixture-forming chamber leading to the respective cylinder.

Page 8, please replace paragraph [0022] with the following amended paragraph:

[0022] The second nozzle needle 4 is a component of a second needle unit 30, which, in

addition to the first nozzle needle [[4]] $\underline{3}$, includes at least one coupling rod 31. The coupling

rod 31 extends inside the first nozzle needle 3 and inside the coupling sleeve 18. In addition,

the intermediate element 19 is embodied in the form of an annular body with an opening in

the center so that the coupling rod 31 can also extend coaxially through the intermediate

element 19. The second needle unit 30, too, can be loaded with pressure and execute a stroke

motion as a whole.

Page 13, please replace paragraph [0035] with the following amended paragraph:

[0035] With the relatively low elevated injection pressure, the delayed pressure buildup in

the control chamber 32 has either no effect or hardly any effect on the opening behavior of the

first nozzle needle 3. The control pressure prevailing in the control chamber 32 is

consequently great enough to transmit sufficient closing forces to the second needle unit 30

by means of the second control piston 42 so that the second nozzle needle 4 remains closed.

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In addition, due to the axial play 44, the first nozzle needle 3 or first needle unit 17 is

decoupled from the first control piston 41 as long as the closing force acting on the first

control surface 43 is not greater than the closing force exerted by the first closing spring 20.

In any case, as long as this condition exists, the first control piston 41 cannot move the drive

ring 22 in the closing direction 21 when a pressure increase occurs in the control chamber 32.

Page 21, please add the following <u>new</u> paragraph after paragraph [0055]:

[0056] The foregoing relates to preferred exemplary embodiments of the invention, it being

understood that other variants and embodiments thereof are possible within the spirit and

scope of the invention, the latter being defined by the appended claims.